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# Patient satisfaction at and after discharge. Effect of a time lag

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## Abstract

**Objective:** Patient satisfaction is an important outcome measure for evaluating the quality of medical care. It is remarkable that consistently high satisfaction ratings have been reported over the last 30 years. There are indications that the time point of administration of a patient satisfaction questionnaire has an influence on satisfaction ratings. This study aimed at investigating whether the assessment of patient satisfaction at different time points resulted in different outcomes.

**Methods:** Patient satisfaction was measured twice. The sample consisted of 152 orthopedic patients who filled in the questionnaire at hospital discharge and one to 12 months after discharge.

**Results:** At follow-up, satisfaction ratings decreased significantly. Satisfaction with postoperative information decreased the most after discharge.

**Conclusion:** The results of this study indicate that the time point of administration of a patient satisfaction questionnaire does influence satisfaction ratings.

**Practice implications:** Patient satisfaction outcomes collected during hospitalization and after discharge may not be interpreted similarly.

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**Keywords:** Patient satisfaction; Orthopedics; Hospital; Health care

## 1. Introduction

It has been increasingly recognized that patient satisfaction is an important outcome measure for evaluating quality of medical care [1–7], especially given the tendency of hospital performance indicators to be made publicly accessible in the industrialized countries of the west. Public access to these performance indicators gives patients the possibility to compare hospitals and physicians. It is generally assumed that transparency of these indicators is an incentive for improving the quality of medical care [8–11].

It is remarkable that consistently high satisfaction ratings of over 90% have been reported over the last 30 years [12–14]. Different mechanisms influence these ratings. First of all, a number of “social-psychological artifacts” may affect expressions of patient satisfaction. “Social desirability

response bias” argues that patients may report greater satisfaction than they actually feel because they believe positive comments are more acceptable. From that perspective it has also been hypothesized that, when responding to questionnaires, people sometimes answer more according to a prevailing social norm than to the factual situation [15]. In addition, “ingratiating response bias” occurs when patients use the satisfaction survey to ingratiate themselves with the medical staff [14,16]. This can lead to high satisfaction ratings. It is suggested that these response biases occur because of the patients’ dependency on the medical staff for treatment [14].

There are also indications that the time point of administration of a patient satisfaction questionnaire has an influence on satisfaction ratings [3,17,18]. However, only a few studies have evaluated whether there is a discrepancy between patient satisfaction immediately after care consultation and at a later time point. These studies show different patterns in patient satisfaction ratings at follow-up. Kinnersly et al. [19] and Savage and Armstrong [20]

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reported lower levels of patient satisfaction, while the study of Jackson et al. [3] showed an increase in patient satisfaction after a time lag between consulting a physician and follow-up. Different opinions have been reported about possible causes of changes in patient satisfaction over time. It is suggested that, at a later time point, after they have had the opportunity to decide whether the caregiver's advice was "right", patients are in a better position to determine whether or not they are satisfied [3,19]. Patients who may have idealized the hospital in their relief and gratitude for the care given may express lower satisfaction when their view becomes more detached after discharge [21]. At a further point in time from the hospital discharge, patients generally have a functional status improvement and are thus less dependent on their hospital care providers and less pressured to give socially desirable answers. This may also result in a more detached judgment [22], and possibly in lower satisfaction rates. On the other hand, this functional status improvement itself can contribute to an increase in patient satisfaction at a later time point [2,3,5,6]. Findings of Kane et al. [6] suggest that patient satisfaction is related to how the patients are feeling at that moment. Because of the functional status improvement, at follow-up patients seem to forget the pain and discomfort of the treatment and the extent of the symptoms that led to their seeking medical care [6].

The present study aimed at investigating whether the assessment of patient satisfaction at different time points resulted in different outcomes among orthopedic patients. This study measured patient satisfaction twice. The first time, the measurement took place at discharge from the orthopedic department of the hospital, the second time after discharge (range 1–12 months). Considering the possible response biases resulting in high satisfaction levels combined with the expectation that, after a time lag, patients are more capable of judging whether they are satisfied with the given care and information, it is our hypothesis that satisfaction ratings of orthopedic patients decrease after discharge.

## 2. Methods

### 2.1. Sample and data collection

Patient recruitment took place at the Orthopedic Department of the University Medical Center Groningen from January 2002 to February 2003. The sample consisted of 152 orthopedic patients who filled in the questionnaire at discharge from the hospital ( $T_0$ ). Administration of this questionnaire at discharge is a standard procedure at the orthopedic department. After a time lag (range 1–12 months), these patients received the same questionnaire at home, to fill it in for the second time and return it by mail ( $T_1$ ). If necessary, a reminder was sent 2 weeks later. Both at the hospital and at home, the questionnaire was self-

administered by the patients. Of the 152 patients who received the questionnaire at home, 114 patients returned it (75%).

### 2.2. Measuring instrument

Patients filled in a questionnaire to measure patient satisfaction. This questionnaire is based on the Dutch translation of the Client Satisfaction Questionnaire (CSQ-8) [23]. Eight items were added to adapt the original questionnaire for orthopedic patients (see Appendix A for the questionnaire). The questionnaire consists of a total of 16 items and three subscales: (1) general satisfaction (8 items); (2) satisfaction with preoperative information (3 items); and (3) satisfaction with postoperative information (5 items). The items can be scored with a five-point "Likert scale", ranging from Agree (1) to Disagree (5). Internal consistency of this questionnaire is calculated with Cronbach's alpha ( $\alpha$ ). The whole questionnaire has an  $\alpha$  of 0.90, the different subscales have alphas of 0.88 (subscale 1), 0.81 (subscale 2) and 0.74 (subscale 3). This questionnaire has proven to be a feasible, valid and reliable instrument to measure satisfaction of orthopedic patients [24]. As an additional aspect for rating overall satisfaction with the given care, a one-item questionnaire in the form of a report mark (range 1–10) was used.

### 2.3. Statistical analysis

Data analysis was done using SPSS 10.0. The mean scale and item scores of the questionnaire were transformed so that a high score represents a high satisfaction level; additionally, the data were transformed to a 0–100 scale. To compare the data of the questionnaires filled in at hospital discharge ( $T_0$ ) with the data of the mailed-in questionnaires ( $T_1$ ), a paired samples *t*-test was used. The overall scores, the scores of the three subscales and the report marks of  $T_0$  and  $T_1$  were compared. Additionally, an analysis of variance was executed to get a more in-depth look into the effect of time on patient satisfaction at  $T_1$ .

Table 1  
Disorders

	N (%)
Total hip arthroplasty	51 (46.8%)
Total knee arthroplasty	17 (15.6%)
Leg or hip surgery	15 (13.8%)
Hand and/or elbow surgery	4 (3.7%)
Back surgery	2 (1.8%)
Ankle and/or foot surgery	8 (7.3%)
Hand and/or wrist surgery	4 (3.7%)
Shoulder surgery	5 (4.4%)
No surgery	1 (0.9%)
Other surgery	1 (0.9%)
Total	114 (100%)

Table 2  
Scores description at  $T_0$  and  $T_1$  and results of paired samples  $t$ -test

	$T_0$ (N: 105–112), mean (S.D.)	$T_1$ (N: 106–112), mean (S.D.)	Mean difference (S.D.)	Skewness of mean difference	$t$	Significance
Overall score	91.65 (8.93)	86.32 (11.61)	–5.52 (9.81)	–0.90	5.85	0.000*
Score subscale 1 (general satisfaction)	93.24 (8.62)	89.20 (11.25)	–4.27 (9.73)	–0.97	4.60	0.000*
Score subscale 2 (satisfaction preoperative information)	90.95 (12.49)	85.11 (14.74)	–5.94 (12.33)	–0.88	5.05	0.000*
Score subscale 3 (satisfaction postoperative information)	89.62 (11.32)	82.52 (15.06)	–7.19 (13.03)	–0.20	5.76	0.000*
Report mark	8.53 (0.98)	8.05 (1.02)	–0.55 (1.01)	–0.56	5.40	0.000*

\*  $p < 0.01$ .

Table 3  
Results of analysis of variance

	No correction		Correction	
	$F$	Significance	$F$	Significance
Overall score	0.359	0.924	0.807	0.769
Score subscale 1 (general satisfaction)	0.234	0.976	0.914	0.624
Score subscale 2 (satisfaction preoperative information)	0.557	0.789	1.323	0.174
Score subscale 3 (satisfaction postoperative information)	0.729	0.648	0.827	0.744
Report mark	0.762	0.620	0.913	0.619

### 3. Results

#### 3.1. Respondent characteristics

The mean age of the patients is 59, with twice as many women ( $n = 77$ ) as men ( $n = 37$ ) in the total population. The mean stay in the hospital was 11.7 days, with men having a longer mean hospitalization than women, respectively, 13.5 and 10.8 days. An overview of disorders in our research population is summarized in Table 1.

#### 3.2. Patient satisfaction at discharge and follow-up

A paired samples  $t$ -test was used to compare the data of the questionnaires filled in at hospital discharge ( $T_0$ ) with the data of the mailed-in questionnaires ( $T_1$ ). The overall scores, the scores of the three subscales and the report marks of  $T_0$  and  $T_1$  were compared. The scores description and the results of the paired samples  $t$ -test are shown in Table 2.

Table 2 shows high satisfaction ratings and report marks, both at  $T_0$  and  $T_1$ . The results of the paired samples  $t$ -test show that the overall score, the scores on the three subscales and the report mark are significantly lower at  $T_1$ . The greatest mean difference of subscale 3 indicates that satisfaction with postoperative information has decreased the most after discharge.

Table 3 reports the effect of time on the patient satisfaction scores and the report mark on  $T_1$ . In order to run this analysis, the categories of patients who filled in the second questionnaire 1–2 months after discharge and 9–12 months after discharge were put together in order to fill these categories sufficiently. First an analysis of variance by means of the difference in satisfaction scores between  $T_0$  and

$T_1$  was executed. Second, sex and type of disorder were incorporated as co-variables in this analysis. The results show no effect of time on patient satisfaction both with and without co-variables. This means that between 1 month and 12 months after discharge the level of patient satisfaction did not change significantly.

### 4. Discussion and conclusion

In this study we investigated the effect of a time lag on the outcome of the patient satisfaction questionnaire that was self-administered twice by orthopedic patients at different time points. Twice as many women as men participated in the study, although no significant differences between the two groups were found with respect to the outcome variables.

A response rate of 75% was seen the second time the questionnaire was administered. A response rate of 80% has been proposed as a minimum in epidemiological studies [25]. In patient satisfaction studies, reported response rates range from 66 to 77%, depending on the data collection procedure [26]. A drop in response rates can lead to non-response bias. Awareness of non-response bias is important, as some evidence suggests that satisfied patients are more likely to reply than dissatisfied patients [18,19]. In that case, it would mean that the patient satisfaction ratings would be lower at  $T_1$  than they are now.

The patient satisfaction questionnaire consists of three subscales: general satisfaction, satisfaction with preoperative information and satisfaction with postoperative information. In general, the scores at  $T_0$  and  $T_1$  showed a skewed distribution, however non-parametric testing resulted in the

same significant differences. In Table 2 only the skewness of the mean differences is reported, as these scores were used to run the analyses of variance.

High levels of patient satisfaction and report marks are seen both at  $T_0$  (overall score: 91.65; report mark: 8.53) and  $T_1$  (overall score: 86.32; report mark: 8.05). These high ratings are in accordance with the trend seen in patient satisfaction research over the last 30 years [12,13]. A consequence of these high scores is a ceiling effect, which limits the ability of the questionnaires to highlight aspects of care in need of improvement or to monitor the effect of initiatives for enhancing the quality of care [22].

In this study, both the satisfaction ratings on the overall scores, the scores on the subscales and the report mark decreased significantly between  $T_0$  and  $T_1$ . With respect to the  $T_1$  scores, an analysis of variance yielded no effect of time on patient satisfaction during the 1-year period. However, a categorization of the  $T_1$  data in quartiles showed a decreasing trend in patient satisfaction scores as well as the report mark in the first quartile (first 3 months), an increasing trend during the second quartile (4–6 months), and a leveling during the third (7–9 months) and fourth quartiles (10–12 months). Once again, these differences were not significant.

On the basis of the decrease in satisfaction scores and report mark between  $T_0$  and  $T_1$  it can be concluded that the time point of administration of a patient satisfaction questionnaire influences satisfaction ratings. As mentioned previously, there are several possible explanations for the decrease in satisfaction. Jackson et al. [3] and Kinnerly et al. [19] explain the change in satisfaction over time due to patients being, after a time lag, in a better position to determine whether they are satisfied with the caregiver's information. Patients who have idealized their hospital stay may have a more detached view of the hospitalization after being discharged [21]. Also, as time passes after hospitalization patients generally feel in a better physical condition and are consequently less dependent on hospital care providers, sensing less pressure to give socially desirable answers [22]. Possible response biases may play a smaller role in the rating of satisfaction at a later time point.

The patients in this study, both at  $T_0$  and  $T_1$ , are less satisfied with the given information as well as with preoperative information (subscale 2) and postoperative information (subscale 3) than with general aspects of care (subscale 1). These findings are in accordance with the general trend seen in patient satisfaction research [27–32]. Patients are particularly less satisfied with postoperative information (subscale 3). This is in line with findings of national and international studies into patient satisfaction [24,27,29,32]. Friele et al. [27] conclude that information provision at discharge is an especially weak point. Clark et al. [32] report that patients give lower ratings to the quality of discharge instruction than to the overall quality of their hospital stay. It is therefore not really surprising that the greatest decrease in satisfaction after a time lag appeared in the subscale of satisfaction with postoperative information (mean difference 7.19).

Additionally, at the Orthopedic Department of the University Medical Center Groningen (as well as in other hospitals) there is a trend towards shortening hospital stays [28,29,33]. A consequence of this development is that people cannot fully judge their satisfaction with postoperative information while still hospitalized. In that sense, the results indicate that inquiring into satisfaction with postoperative information cannot be validly done if orthopedic patients are still hospitalized. The results also indicate that there is no difference in patient satisfaction during the 12 months after discharge. Apparently, a short time lag is sufficient to give orthopedic patients the time to consider the given care and information. Providing sufficient information to meet patients' desires, needs and wants is an area in which patient satisfaction can be gained or lost [34].

#### 4.1. Practice implications

When evaluating patients' satisfaction with care, the fact that the timing of administration of a patient satisfaction questionnaire influences the outcomes of the questionnaire should be taken into account. Patients' point of view may change even over a short period of time. Patient satisfaction outcomes, collected during hospitalization and after discharge, may not be interpreted similarly.

The timing of patient satisfaction assessments should depend on the subject of the questionnaire. For instance, if the questions are about satisfaction with postoperative information, the questionnaire should be administered after a certain time lag following hospitalization. This time lag gives patients time to decide whether the given information was sufficient and whether they are satisfied with the information provided.

#### Appendix A. The adapted client satisfaction questionnaire

- Subscale 1. Overall satisfaction
  - The care of the nursing staff was good.
  - If friends or family were in need of similar help, I would recommend the Orthopedic Department of Groningen University Hospital.
  - The quality of care was good.
  - The care and service met my expectations/satisfied my wishes.
  - I received the kind of service I wanted.
  - Overall, I am satisfied with the care and service given.
  - If I was seeking help again, I would come back to the Orthopedic Department of Groningen University Hospital.
  - I am satisfied with the food at the Orthopedic Department.
- Subscale 2. Satisfaction with preoperative information
  - In general, the information I received was good.

- The physicians informed me properly about the treatment/surgery.
- I have had a satisfying voice in my own treatment.
- Subscale 3. Satisfaction with postoperative information
  - I have been properly informed about the postoperative lifestyle rules.
  - I know how to apply the postoperative lifestyle rules.
  - I have been informed early about the date of discharge or transfer to a rehabilitation center.
  - There were enough opportunities to ask questions.
  - The physical therapists have helped me well with the rehabilitation.

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